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This review describes the contents of the nine elementary teacher education models by presenting a generalized model combining their three essential features: curriculum modules (tasks, experiences, objectives), student flow through the modules (candidate selection, individualized programs, laboratory experiences), and institutional supporting systems (procedures, personnel, materials). Major points of the critique are that the models are insufficiently specific to be immediately operational, indicating the necessity of redesign prior to implementation; further, although the models abandon traditional course structure and promote self-correction, they are similar in philosophy to current practice; finally, the models do not attack the structural problems of "changing teacher training without changing educational institutions." (Related documents, final reports of the nine funded models, are ED 018 677, ED 025 456-57, ED 025 490-92, ED 025 595, ED 026 301-02, ED 026 305-31, ED 027 283-87.) (DL)

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# Some Comments On Nine Elementary Teacher Education Models*

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March 20, 1969

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## Preface

During 1967 the United States Office of Education's Bureau of Research initiated a new Elementary Teacher Education Development Program, which later became the Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers. After a series of conferences, a request for proposals for a large-scale teacher education program was issued on October 16, 1967. The request outlined nine components for the proposed models. By January 1, 1968, 80 proposals had been received. Twenty of these were selected by USOE personnel to be reviewed by an outside evaluation panel. The review panel recommended 12 as suitable plans for developing a model, and, of these, 9 were finally funded. The 9 teacher education institutions that were selected then prepared the models listed on the next page, submitting them to USOE in the fall of 1968. Harry Silberman of System Development Corporation and Ned Flanders of University of Michigan were asked to review the 9 completed models for an American Educational Research Association talk in February, 1969. This paper is Dr. Silberman's review.

# Some Comments on Nine Elementary Teacher Education Models

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When Glen Boerrigter asked me to take a look at the nine model elementary teacher education reports and comment on them, I didn't expect 6,000 pages. As soon as I saw the reports I asked Dr. Beverly Kooi to assist me in the review.

It turns out on reading the reports that the models are fairly similar. To give you some idea of what they contain, we will describe a generalized model that incorporates some of their features. Then we'll give you reactions to the models.

## The Generalized Model

The goals of our generalized model are very similar to those of today's leading teacher training institutions. The primary purpose, as in the Syracuse model, is to prepare a "generalized" elementary school teacher. It is not a blueprint for preparing teachers of educationally disadvantaged, empathically barren suburban, culturally isolated rural, pre-school, or other special children. The goals of our teacher training program are determined in a number of ways--working back from projections of the future of society, analyzing the behavioral outcomes expected of children, or by consensus and review of expert consultants. It doesn't seem to matter what strategy is used; there is remarkable overlap among the nine models.

The program specifications to achieve these goals include three sets of specifications. First, a set describing curriculum modules. Second, a set describing the student flow through those modules. Third, a set describing the various institutional support systems that are necessary to implement the model. Let me describe each of these in our general model.

### Curriculum Modules

The curriculum in our model is structured not in courses, but in much smaller units, called modules, that can be arranged in a variety of sequences for different teacher trainees. In each module the trainee achieves a single objective; the time he needs to complete the module depends upon the task involved and upon his own strengths and weaknesses.

The curriculum modules contain a large number of good ideas for teacher training. Michigan State alone has something like 2,700 modules. Each one contains a statement of objective, prerequisite modules, the experiences or treatment the trainee needs to achieve the objective, and the instructional setting--such as small group, individual study group, or large group. It also contains a description of needed materials, the grade level and area of specialization for which the module is preparing the trainee, the estimated time required for trainees to complete the experience, and a set of descriptor terms for filing. In the Michigan model, modules are grouped into clusters called components. When a student masters the objectives in all the modules in a component he gets quarter-term course credit. In the Georgia model the modules are organized into clusters, called blocks, that are analogous to courses.

The objectives for the modules are stated primarily in operational terms. To give a few examples: (from Michigan) "The trainee will demonstrate a knowledge of procedures needed to dispense, collect, and return materials by observing an experienced teacher and listing the procedures used"; (from Massachusetts) "The candidate will explain two methods of teaching the addition of integers"; (from Ohio) "The student will demonstrate knowledge of Klausmeier's principles for teaching factual information" (Ohio has an interesting set of objectives on contingency management); (from Syracuse) "The student will be able to 'state at least three different respects in which research findings support the notion that teachers' expectancies influence students' classroom behavior and performance', or 'Select and organize an appropriate activity for eight pupils in a third-grade class ranging in reading grade equivalent from 2.1 to 3.1, all of whom are having difficulty with consonant digraphs'"; and (from Florida) "The trainee will acquire a knowledge of specific terms which refer to observable overt behavior such as name, describe, state, analyze, employ...so that when given a list of behaviorally stated objectives, he will be able to identify the terms which specify the behavior outcome described."

Although there is great overlap among the objectives described in the models, there were some differences in emphasis. Florida emphasized cognitive objectives; Massachusetts and Teachers College emphasized human-relations skills; Ohio emphasized instructional procedures and technology; Michigan emphasized the behavioral sciences.

The treatments described in the modules include the usual gamut of individual, small-group, and large-group activities--sensitivity training, micro-teaching, simulation training, CAI, PI, tutoring, reading, team teaching, and field experiences. Criterion-referenced performance tests are used. Trainees take the pretest, find materials and engage in the specified treatment activities, and take the posttest. The length of time required to complete the tasks varies; generally, it runs about an hour or two, depending on the trainee. If the trainee has difficulty, treatment alternatives are available or a special conference with a clinical professor can be arranged.

Sequencing is arranged by branching instructions in the module. For example, in the Syracuse model, each module has a flow chart to show just how activities are to be sequenced within it. The relationships between the modules of different content areas are carefully outlined, showing which modules come first and what activities occur at the same time. Some modules are prerequisite to others and are taken in sequence, while others are remedial alternatives that are taken only if a trainee has difficulty with the mainstream modules. Different modules are taken by different trainees, depending on their entry skills and career goals. For example, a trainee who wants to be a specialist in evaluation may get a module on the history of measurement; one who is specializing in art may not. The modules are coded in such a way that a new program can be built by sorting modules on variables that describe the new program.

Student Flow

The second specification needed to reach our goals was the student flow through the program. In our generalized model, the students entering the program are carefully selected from the undergraduate program. In the early stages of the program they are exposed to the academic content areas. Gradually the emphasis shifts toward professional training, where the trainee, after appropriate pretests, is placed correctly in the sequence of modules described earlier. The trainee becomes involved with children gradully, first receiving simulated and then actual classroom experiences.

As in our description of modules, aspects of student flow can also be illustrated with the actual models. Florida, for example, admits candidates on ability, commitment, and physical and mental health criteria. Georgia selects students by standardized tests (such as the GRE) and by high school grade-point ranking. It is expected that careful screening will in itself help recruit better people into the program. The Georgia model establishes alternate career ladders for teacher to augment its normal recruitment of teacher candidates; a student will be allowed to enter teaching directly from high school as an apprentice, attend college on a part-time basis, advance to teaching assistant, and then become a teacher. Georgia has another route to teaching for non-education majors who may enter teaching directly as aides or as teaching assistants. These alternate paths are expected to yield a 3% annual increase over current growth in the teaching field.

After the trainee is admitted to the program, he is tested to see how well he has attained prerequisite entry skills, placed in the appropriate modules, and proceeds at his own pace. Typically, long-term planning precedes short-term planning. The trainee may choose the module that best suits him from a variety of alternatives. There are at least two instructional alternatives for each objective. The trainee may even negotiate to substitute a module of his own making for one in the sequence. Since it is easy to lose track of people in an individualized system, expected amounts of time for students to complete

different modules are defined as part of the performance criteria. In the Massachusetts model, each trainee is scheduled for 15 minutes of guidance every two weeks. In the Teachers College model, trainees work through the program in small groups of about 12 students. The group stays together throughout the training period, and members tutor one another and help each other carry out small educational experiments.

A sequence of laboratory experiences leads gradually to classroom teaching assignments. For example, in the Northwest model there is a requirement that the trainee demonstrate his ability to change pupil behavior, first in a simulation laboratory, and then in a classroom practicum, before awarding him the teaching certificate. The sequence for the practicum training includes a gradual increase in the number of lessons the trainee must teach per day, a gradual increase in the number of pupils taught per lesson, and increasing levels of complexity in what is to be taught. During his internship the trainee may be working as part of a teaching team responsible for a school unit with about 150 students. It is also expected that the requirement for close supervision of the trainee will gradually decrease during the practicum period.

To have a smooth match between preservice and inservice training, the elementary schools that are fed by the university must make some changes. For example, since trainees are working on different modules in preparation for different staff positions, those positions need to be established in the schools. A number of the models specify different staff roles in the training schools. Massachusetts, for example, specifies positions with different levels of responsibility and areas of specialization. The top two levels are on 12-month contracts and are given tenure only on the basis of performance. About one-fourth of the staff at the school are expected to be at the top two levels, and the top position has twice the salary of the bottom position. Other minor positions are defined--to perform technical skills, to encourage high school and elementary students to participate in a cadet teaching program, and to recruit a wider variety of persons into teaching. The goal is to tap a wider source of talent. Anyone who can demonstrate his competence is eligible for the appropriate position in the career ladder at the school. Thus, who fills vacancies is determined by competitive supply and demand implemented through a system of diagnosis and placement, rather than accumulated course credits. The Massachusetts model also expands the field of teacher trainers to include anyone with skills who has something to offer. For instance, the content knowledge about a specific aspect of the Civil War might be more effectively learned from a noneducator who is a Civil War expert. This idea is carried much further in one of the appendices of the Northwest model, where Robert Fox and Ronald Lippitt describe a Human Relations School that features extensive community involvement. The managers of the school have free access to resources in the community and enlist them in the common cause of helping children learn.

Support Systems

In order for the students to flow through the many modules, it is necessary to have support systems--that is, procedures, personnel, and materials--to manage the operational program. The various models exhibited a variety of these management systems. Syracuse describes three; Massachusetts describes six. In our generalized model, there are three kinds of management support systems. One, the program support system, is used to design, construct, and test instructional modules, and to handle the logistics of the program; the second, an information and evaluation support system, collects, analyzes, and disseminates data for system evaluation and revision. This subsystem also monitors student progress. Finally, we might have in our generalized model a control system to recruit, train, and manage the staff; raise funds; solicit cooperation from and keep a liaison with the rest of the university, public schools, industries and R&D groups; and set new directions for the program as conditions warrant. This subsystem would be very concerned about both the cost and the benefits of the program.

A number of the models we looked at specify some existing form of general-purpose data-management system, using a computer, to process all of the data in their information support systems. For example, Michigan uses the Basic Information and Retrieval, or BIRS, system. Northwest uses the Integrated Communications Experiment, of ICE, system. Florida uses a Computerized Management Control, or CMCS, system. Such systems provide the data for model revision and constitute a built-in self-correcting mechanism for improvement of the program.

Only a few of the models considered cost factors for support systems. Pittsburgh estimated it would cost $804,000 to develop materials, and would require 20 hours of retraining per staff member. They also estimated that they would need one additional staff member per 50 students, and 50 more square feet per pupil. Michigan also estimated equipment costs and number of staff members required for developing the system (about 15 per 100 students). A number of the models acknowledge that costs will be higher. Ohio estimated that the evaluation function alone would consume 10% of the operating budget.

That describes the generalized model elementary teacher education program. It does depart from present teacher training programs in at least two ways. One is the abandonment of traditional course structure in favor of an individualized, or continuous-progress, program. The second innovation is self correction. It is achieved by continuously evaluating the progress of trainees against operational objectives, and making appropriate changes to the training program where objectives are not being achieved.

## Reactions to the Models

Now let me give you three of our reactions to the models. Our first reaction was that the models are incomplete. For example, some of the models talk about placement of students in the program or job placement of graduates, but never really lay out the steps clearly. In the discussion of teacher roles, the models do not reflect a careful analysis of the educational activities of the teacher. The differentiated positions that are defined in some of the models reflect more a status hierarchy than a division of labor.

A number of the models have sections on cost effectiveness that don't really say anything. These sections assume we have a much better handle on the educational objectives than we do. How do you translate a gain in a rating score of someone's microteaching experience into dollar value to yield a cost-benefit ratio for comparison with other alternatives?

The specifications of objectives that do exist are very uneven. Sometimes it isn't even clear whether the examples given are supposed to be objectives or general goals. In the same model, one content area may have only two objectives while another has more than a hundred. Too many of the specifications read like exercises at the end of chapters in textbooks covering educational psychology, educational administration, educational sociology, educational methods, and educational technology. Others look like course outlines. In too many cases the objectives are neither specific enough nor operational enough to be implemented without further definition, and the sections on evaluation merely indicate that the objectives will be evaluated by a test, a conference, or an observer. No specification is given of any absolute criteria for judging the adequacy of the observed behavior or product.

In most of the models, all kinds of data are put into computers and fed into other units at the appropriate times, to effect timely decisions, but the data are described in extremely global terms that could not possibly lead to a computer management system. More useful data would be: the anticipated size of files, the number of elements, the number of items in each element, how frequently the data must be updated, whether on-line access with immediate response is required, what manipulations will be required of the data, how it shall be organized, and the kinds of requests that are to be made. These things are critical in determining the type of facility needed, its cost, and the staffing and space requirements. Considering the long lead times in staff acquisition and hardware and software development, these are critical omissions.

How many people are required to implement the model? How will students transfer to other teacher-training schools? Who will develop the materials, the tests, the remedial alternatives? When will these things get done? What will they cost? We really can't build a model until we begin to answer such questions.

One isn't forced to establish priorities until the detailed planning stage, where the cost of elements in the model clearly indicates that some things will have to be taken out and the model redesigned. Thus far, the models promise to do everything, but are committed to nothing.

There is, of course, an advantage in not specifying exactly how these things will be done. It is that any subsequent definition of program requirements will still be compatible with the model. This compatibility, however, is purchased at the expense of a clear guide to practice, which is the main purpose for building a model in the first place.

Our second reaction was that the models are very conventional. They don't seem to be very different in philosophy from what we are now doing in teacher education. The scope and sequence of many of them look remarkably like school-of-education programs of the last 20 years. During the first two years the students get a broad foundation in the liberal arts. This is followed by professional education in teaching competencies, classroom observation, and then student teaching experiences. Consider this example of one of the specifications. "All entering students take a two-week course. The course shall consist of three lectures on functions of schools--one of them on sources of financial support, one on government of public education, and one on the disadvantages of conventional elementary schools--and a field trip. Paper and pencil tests will be given at the end of the two-week course to determine whether facts and concepts are recalled. A brief essay is asked for, to determine whether the facts and concepts are applied in defining and solving a problem--for example, identifying the limitations and procedures that would need to be observed in introducing sex education into an elementary school."

Probably the major innovation described in the models is the concept--but, we think, not the practice--of individualizing the teacher training program. One author speaks of self-paced experiences to allow trainees to move through the program at their own rate, but the model he describes schedules its program by year--two years for underclass phase, and two for pre-service phase. He reconciles these things by saying that those who finish early will take enrichment courses and have special assignments. In another model, pacing is declared to be individual, but the program is group-paced, despite a lot of talk about working only until mastery on a skill is achieved.

Despite all of the drum-beating for individualized instruction as the new approach, we believe that most of the stated objectives could fit easily into the present course structure in our better teacher-training institutions. The specifications seem to be derived less from an analysis of what it takes to change pupil behavior in the classroom than from interesting topics that have appeared in the literature. There is a great deal of talk <u>about</u> behavioral science, <u>about</u> language arts, and <u>about</u> professional practices; but knowledge seems still to be very separate from practice. There are too many old ideas with new labels attached to them. For example, someone who defines objectives,

adapts instruction to individual needs, selects appropriate strategies, organizes learning activities, interacts with pupils and evaluates progress, reports to parents, selects materials, controls behavior, plans lessons, teaches lessons, etc., is now called an instructional manager in one of the models.

The problem with being conventional is primarily one of relevance. We wonder whether teacher-education can any longer afford to retain the traditional academic orientation, ignore preschool and infant training, and reserve special modules for incidental treatment of the black urban student. Can we afford to retain the goal of producing the omniscient teacher? When we do talk about differentiated staffing, it is only as an afterthought. Just how important is the section on history of measurement that appears in most of the models? Why should it take a full year to train a teacher aide to collect lunch money? How much knowledge is really necessary for the paraprofessional task that can be learned by elementary school children in a few days? How relevant, indeed, is it, that the teacher trainee will--when wired to an electric encephalogram--be able to demonstrate the ability to control brain wave functioning? The model that listed that specification was thorough in listing several instructional alternatives should the trainee have difficulty--one of them suggested that the trainee participate in a session with an instructor who can control his own brain waves and who can wire the trainee's waves to an electric encephalogram for practice purposes.

Our third and final reaction is that the models don't attack the difficult structural problems. They talk about changing teacher training without changing educational institutions. They place little emphasis on the potent structural variables that govern how the teacher will behave in the classroom after the novelty, the Federal funds, and the R&D people are gone. Some of the models do at least recognize the problem. One called for a college within a college to reward teacher-training activities instead of research, scholarly writing, and graduate-level teaching. Another model admitted that the current structure does not leave room for the kind of rationality we would like to see. What is to prevent the professors in the new system from making it difficult for trainees to find them during office hours? What structural changes have been made in the models to prevent the system from falling apart after the teacher leaves the university to accept a job in the real world? In our opinion, teacher training will always be ineffective unless contingencies are built into the very design of elementary schools to exert a continuing force toward improvement of teaching. For example, salary policies of elementary schools will have to be changed. Teachers must be rewarded in proportion to the success of their pupils if they are to have a vested interest in effective teaching. How about public distribution of report cards on teachers, describing their improvement in getting pupils to learn? Some mechanism needs to be designed for transferring out of the classroom teachers whose pupils are not achieving their objectives. Perhaps certain teaching-staff positions should be eliminated and the money used to pay student and parent tutors who could do a

much better job on some of the more routine instructional tasks. Of course this will present problems with teacher unions; but such problems are not dealt with in most of the models.

Perhaps some of the preservice training resources should be invested in the classroom environment rather than preservice training. Consider the possibility that regardless of how a teacher has been taught to teach reading, the nature of the reading series purchased by the school will determine what she actually does in teaching reading. It might be easier and more effective to change the reading series than to change the teacher.

Similar structural variables in the design of the university program might have been explored in the models. For example, it may be a much better investment to spend most of the university's resources in a vigorous program of recruitment and selection of trainees and less on the long five-year training program. People who are already good problem solvers, with integrated personalities, who understand children and the community, would be much more easily prepared for assuming specialized or differentiated roles on a school staff than people who are selected on the basis of standardized verbal measures and then remade--if that is really possible--into open and integrated human beings.

None of the models took a hard look at the manner of financing teacher training. As long as the people who benefit from the teacher-training program are not the people who pay most of the bill, we are going to have trouble getting support for a rational program. Perhaps teacher-training schools should be paid a percentage of the salary of the teachers they produce over a period of time. This would give the teacher trainers a vested interest in their trainees' on-the-job performance. It would also introduce a healthy competition among teacher-training institutions.

None of the models commented on the political problems of giving the university much more authority--and, of course, more responsibility--for what happens in the elementary schools where inservice training is being conducted. Indeed, inservice training got relatively little attention in most of the models. Moreover, little attention was devoted to mechanisms for resolving the real conflicts between criteria for teacher selection that might be adopted by the community and the performance criteria adopted in the models. The models didn't attack the problem of how the incentive structure at the university could be redesigned to attract the most able people into teacher training. Similarly, no mechanism was designed to make it easy to get rid of a teacher trainer who was ineffective. Little attention was given to reconciling conflicts between the goals of the programs specified in the models and goals of the trainees themselves.

In summary, we feel that there is little value in improving teacher training unless specific plans are made for changing the two social institutions that

determine teaching effectiveness--namely, the university and the elementary school. We appreciate the fact that the potent structural variables are difficult to manipulate because such manipulation often interferes with the vested interest of powerful groups, and we expect such changes will be made only very gradually. However, unless the models serisouly face up to the problem of making such changes, they are not likely to deliver on their promises to improve the effectiveness of classroom instruction.

We believe these three reactions to the first drafts of the nine models will be answered by Phase II and Phase III of the program. The exciting prospect before us is that, finally, sufficient funds are available to dispatch the full-time efforts of university and school people to developing a rational system of teacher training.

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